Mobility and signal strength- aware handover decision in mobile IPv6 based wireless LAN

Abstract:

Existing wireless networks aim to provide information communication services between mobile nodes. As a mobile node move between different radio networks, a handover process is needed to change its point of attachment to the predicted radio network. Since traditional (based on one metric Received Signal Strength Indicator) predictions of handover decisions do not perform well, it is a pressing need to develop an intelligent approach to predict the handover decision process, thus yielding seamless handovers. To this end, in this paper, we propose a Mobility and Signal Strength-Aware Hand-off Decision (MSSHD) approach to predict the handover decision in wireless networks. The Received Signal Strength Indicator and the direction of Mobile Node parameters are considered as inputs to the fuzzy inference system to predict the handover decision, and hence switching to the best preferable access point. To achieve a fair comparison with a standard handover performance, we have implemented a MSSHD approach in Omnet++. The results of the simulation study show that the proposed approach can reduce the handover latency as well as the wireless access media delay (link-layer switching time).